

COVER Book Cover

Proprinters

**Service Information and
Parts Catalog**

Document Number SA38-0099-02

EDITION Edition Notice

Third Edition (November 1993)

The drawings and specifications contained herein shall not be reproduced in whole or in part without written permission.

IBM has prepared this publication for the use of customer engineers in the installation, maintenance, or repair of the specific machines indicated. IBM makes no representations that it is suitable for any other purpose.

This publication could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time.

Requests for copies of IBM publications should be made to your IBM representative or to the IBM branch office servicing your locality.

Address comments concerning the content of this publication to IBM Corporation, Dept. 698, Bldg. 962-1, 455 Park Place, Lexington, Kentucky, 40511. IBM may use or distribute whatever information you supply in any way it believes appropriate without incurring any obligation to you.

References in this publication to IBM products, programs, or services do not imply that IBM intends to make these available in all countries in which IBM operates.

Copyright International Business Machines Corporation 1991, 1993.
All rights reserved.

Note to US Government users - Documentation related to Restricted rights - Use, duplication, or disclosure is subject to restrictions set forth in GSA ADP Schedule Contract with IBM Corp.

LEGEND Special Notices

References in this publication to IBM products, programs, or services do not imply that IBM intends to make these available in all countries in which IBM operates. Any reference to an IBM product, program, or service is not intended to state or imply that only IBM's product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any of IBM's intellectual property rights or other legally protectible rights may be used instead of the IBM product, program, or service. Evaluation and verification of operation in conjunction with other products, programs, or services, except those expressly designated by IBM, is the user's responsibility.

IBM may have patents or pending patent applications covering subject matter in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to the IBM Director of Commercial Relations, IBM Corporation, Purchase, NY 10577.

The following terms, denoted by an asterisk (*) in this publication, are trademarks of the IBM Corporation in the United States and/or other countries:

IBM
Proprinter
NLQII
Proprinter 24P.

CONTENTS Table of Contents

COVER	Book Cover
EDITION	Edition Notice
LEGEND	Special Notices
CONTENTS	Table of Contents
1.0	Chapter 1. Service Information
1.1	Machine Type/Model Identification
1.2	Read This Before Replacing Any FRUs
1.2.1	Proprinter Initialization Procedure
1.3	Bidirectional Print Adjustment (Proprinter III [4201-003] and Proprinter III XL [4202-003])
1.3.1	Initialize Printer
1.3.2	Select a Window
1.3.3	Changing Settings
1.4	Bidirectional Print Adjustment (Proprinter X24E [4207-002] and XL24E [4208-002])
1.4.1	Testing Bidirectional Printing
1.4.2	Changing Settings
1.5	Self-Test
1.6	Function (Switch) Settings
1.7	Soft Switch Configuration (Proprinter III, IIIXL, X24E, and XL24E)
1.7.1	Setting the Printer Function
1.8	Serial-Interface Card Switches (Proprinter I, II, and X24)
1.8.1	Group A
1.8.2	Group B
1.9	Serial-Interface Card Switches (Proprinter 4201/4202 Model 003 and 4207/4208 Model 002)
1.9.1	Function Switches
1.10	Mode Selection Switches (Proprinter III, IIIXL, X24E, and XL24E)
1.10.1	Switch 1
1.10.2	Switch 2
1.10.3	Serial Interface Self-Test
1.11	General Checkout
1.12	Clearing Paper Jams
1.13	Common Printer Problems
1.14	Common Sheetfeeder Problems
1.15	Sheetfeeder Drive Gear Kit (P/N 51F3712)
1.16	Adjustments
1.16.1	Print Head to Platen Adjustment (All Proprinters)
1.17	Service Tips
2.0	Chapter 2. 4212 Proprinter 24p
2.1	Related Publications
2.2	Checklist
2.3	Font or Pitch Lock
2.4	Thermal Protection Slowdown
2.5	Switch Settings
2.6	Performing the Printer Test
2.7	Interrupting or Stopping the Printer Test
2.8	Adjusting the Bidirectional Alignment
3.0	Chapter 3. Parts Catalog
3.1	420X Proprinter (Common Parts)
3.2	ECA P/N Information
3.3	Assemblies
3.3.1	Assembly 1: Main Cover and Accessories (All Models)
3.3.2	Assembly 2: Base Logic (All Models)
3.3.3	Assembly 2: Base Logic (All Models)
3.3.4	Assembly 3: Paper Feed (4201-001, 4201-002, 4201-003 and 4202-001)
3.3.5	Assembly 4: Paper Feed (4201-003 and 4202-003)
3.3.6	Assembly 5: Paper Feed (4207-001 and 4208-001)
3.3.7	Assembly 6: Paper Feed (4207-002 and 4208-002)
3.3.8	Assembly 7: 4212 Proprinter 24P
4.0	Chapter 4. Part Number Index

1.0 Chapter 1. Service Information

This chapter provides service information for the Proprinter family of printers. It contains printer specifications, diagnostic tests, problem isolation procedures, corrective procedures, and adjustment procedures. This chapter also includes general service tips for the Proprinter* family.

Subtopics

- 1.1 Machine Type/Model Identification
- 1.2 Read This Before Replacing Any FRUs
- 1.3 Bidirectional Print Adjustment (Proprinter III [4201-003] and Proprinter III XL [4202-003])
- 1.4 Bidirectional Print Adjustment (Proprinter X24E [4207-002] and XL24E [4208-002])
- 1.5 Self-Test
- 1.6 Function (Switch) Settings
- 1.7 Soft Switch Configuration (Proprinter III, IIIXL, X24E, and XL24E)
- 1.8 Serial-Interface Card Switches (Proprinter I, II, and X24)
- 1.9 Serial-Interface Card Switches (Proprinter 4201/4202 Model 003 and 4207/4208 Model 002)
- 1.10 Mode Selection Switches (Proprinter III, IIIXL, X24E, and XL24E)
- 1.11 General Checkout
- 1.12 Clearing Paper Jams
- 1.13 Common Printer Problems
- 1.14 Common Sheetfeeder Problems
- 1.15 Sheetfeeder Drive Gear Kit (P/N 51F3712)
- 1.16 Adjustments
- 1.17 Service Tips

1.1 Machine Type/Model Identification

Printer Name	Machine Type/Model
9 Wire:	
Proprinter	4201-001
Proprinter II	4201-002
Proprinter III	4201-003 (Propark)
Proprinter XL	4202-001
Proprinter II XL	4202-002
Proprinter III XL	4202-003 (Propark)
24 Wire:	
Proprinter X24	4207-001
Proprinter X24E	4207-002 (Propark)
Proprinter XL24	4208-001
Proprinter XL24E	4208-002 (Propark)
Proprinter 24P	4212-001

1.2 Read This Before Replacing Any FRUs

Subtopics

1.2.1 Proprinter Initialization Procedure

1.2.1 Proprinter Initialization Procedure

Follow procedures exactly:

This service aid addresses functional related problems on the 4201 and 4202 Model 003, and the 4207 and 4208 Model 002.

If any of the printers listed above demonstrate any of the following characteristics:

- Missing or erroneous characters
- Incorrect indexing or spacing head crashing
- Incorrect paper spacing
- Forms or head drive motor failures
- Shifting margins
- Locked in Propark mode.

| **Note:** Initialization resets the current soft switch settings. You
| may want to print the current settings first (see "Soft Switch
| Configuration (Proprinter III, IIIXL, X24E, and XL24E)" in topic 1.7).

Perform the following printer *initialization* procedure before replacing any FRUs:

1. Switch the printer Off (O).
2. Remove all paper from the printer.
3. Move the print head to the far left position.
4. Press and hold the two blue keys (**Propark** and **NLQ**) on the operator panel, then switch the printer On (|).
5. Release the two blue keys once the lights on the panel flash in a clockwise rotational manner.

Note: The Power light will stay on and not flash.

6. Wait a few seconds, then switch the printer Off (O).

The initialization procedure is now complete.

If the printer was originally locked in the Propark mode (pinfeed wheels would not move when rotating the forms knob), continue with the following steps:

1. Switch the printer On (|).
2. After the printer has booted up, the Power light will come on.
3. Press the **Propark** key, and the pinfeed mechanism will unpark.
4. The printer should now be out of the Propark mode.

Verify that the pinfeed wheels will turn when the forms knob is rotated.

The initialization procedure resets the ROM module on the printed circuit board to the original factory setting and may require that the bidirectional alignment procedure also be performed.

Perform a print test to verify printer function and good print quality.

Note: If this service aid does not resolve the original problem, perform normal diagnostic procedures to correct the printer.

| 1.3 Bidirectional Print Adjustment (Proprinter III [4201-003] and Proprinter III XL [4202-003])

Subtopics

1.3.1 Initialize Printer

1.3.2 Select a Window

1.3.3 Changing Settings

|1.3.1 Initialize Printer

|**Note:** Initialization resets the ROM module and switch settings to the original factory setting.

- |1. Switch the printer Off (O).
- |2. Remove all paper from the printer.
- |3. Move the print head to the far left position.
- |4. Press and hold the two blue keys (**Propark** and **NLQ**) on the operator panel, then switch the printer On (|).
- |5. Release the two blue keys once the lights on the panel flash in a clockwise rotational manner.
- |6. Wait a few seconds, then switch the printer Off (O).

1.3.3 Changing Settings

After you have selected the window, adjust the printer to the best print line. A set of four asterisks (****) next to line 05 marks the current setting.

1. If the best print line is:
 - 05, press the **NLQ** key. This locks in the setting and prints the line.
 - 04, 03, 02, 01, 00, press the **Propark** key to change the setting toward the desired line. Each time the key is pressed, the setting moves one line. Go to step 2.
 - 06, 07, 08, 09, 10, press the **Online** key to change the setting toward the desired line. Each time the key is pressed, the setting moves one line. Go to step 2.

HH	00
HH	01
HH	02
HH	03
HH	04
HH	****
HH	05
HH	06
HH	07
HH	08
HH	09
HH	10

2. Press the **NLQ** key. The printer will print the selected line to confirm the setting.

HH	****
	06

Notes:

1. The latest level microcode, EPROM 48F7064, will include an adjustment for both NLQ and Draft mode. If another grid of H's, with a number "2" at the top left prints out, go back to step 1 and adjust for Draft mode.
2. If after performing the above procedures you still have poor print quality, see the Common Printer Problems table on page 1.13.

|1.4 Bidirectional Print Adjustment (Proprinter X24E [4207-002] and XL24E [4208-002])

If the dots that form the printed characters are not registering properly, so that characters are misshaped or incompletely formed, you can adjust the bidirectional printing.

Notes:

1. 24-wire Model 001 machines cannot be set.
2. If this procedure does not improve print quality, you may want to replace the print head coupling and/or the helix shaft.

Subtopics

- 1.4.1 Testing Bidirectional Printing
- 1.4.2 Changing Settings

1.4.1 *Testing Bidirectional Printing*

1. Load single-part continuous-form paper into the printer (minimum size 8-1/2 x 11).
2. Ensure that the printer is switched Off (O).
3. Ensure that the forms-thickness lever is in position 2 or greater.
4. Press and hold the **Propark** and **LTRQ** keys, then switch the printer On (|). The printer emits three beeps and prints a 13-line grid of characters (see Example B).

PICTURE 1

A set of four asterisks (****) printed to the right of a line indicates which line is the present setting.

When the print cycle is complete, the Pitch 12 and Propark lights flash. This indicates that the printer is in Adjustment mode.

5. Determine which line contains the best-quality characters.

1.4.2 *Changing Settings*

To move the setting in the up (-) direction, press the **Propark** key. Pressing this key once moves the setting one step.

To move the setting in the down (+) direction, press the **Online** key. Pressing this key once moves the setting one step.

When the adjustment has been made, press the **Ltr Q** key to save the adjustment and get a printout showing the new setting. Only the line that was chosen is printed.

1.5 Self-Test

When self-test is selected, the printer performs the normal power-on internal tests, and then prints a test pattern. This test pattern is unique for each printer. You do not have to connect the printer to a computer or terminal to run the test.

To start the test, press and hold down the far left key, then switch the printer On (|). Release the left key when printing starts. The printer continues to print the test pattern until you switch the printer Off (O), or until the paper supply runs out. To interrupt the test, press the **Online** key. Printing stops after a complete line of characters print. To continue the test, press the **Online** key.

Note: 4202-002 (PRO IIXL) will only print an 8-inch print test, regardless of how switch 1 is set.

1.6 Function (Switch) Settings

The following table is for machines that use a mechanical (DIP) switch to set the printer functions (Proprinter I, II, XL, IIXL, X24, and XL24).

PICTURE 2

Printer Model	Switch	On	Off
I	1	No beep when Paper Out light is on	Beeps when Paper Out light is on
II	1	Ignore Form Feed	Honor Form Feed
XL, IIXL	1	13.6-inch print line	8.0-inch print line
X24(1), XL24	1	8-inch print line	13-inch print line
II, IIXL	2	NLQ key select NLQ font	NLQ key select NLQII* font
XL, I	2	Slashed zeros	Normal zeros
X24, XL24	2	Enable Sheet Feeder	Disable Sheet Feeder
I, II, XL, IIXL, X24, XL24	3	Automatic line feed after carriage return	No line feed after carriage return
I, II, XL, IIXL, X24, XL24	4	12-inch forms	11-inch forms
I, II, XL, IIXL, X24, XL24	5	Character Set 2	Character Set 1
I, II, XL, IIXL, X24, XL24	6	Automatic Carriage Return on vertical movement	No automatic Carriage Return on vertical movement
II	7	Always on	
I, XL, IIXL	7		Always Off
X24, XL24	7	Alternate Graphics Support On	Alternate Graphics Support Off
(1) The Proprinter X24 ignores switch 1.			

Note: If your printer has switch 8, it should be Off.

Proprinters: Service Information and Parts Catalog
Soft Switch Configuration (Proprinter III, IIIXL, X24E, and XL24E)

1.7 Soft Switch Configuration (Proprinter III, IIIXL, X24E, and XL24E)

The following instructions are for printers that use the Operator panel to set the printer functions (Proprinter III, IIIXL, X24E, and XL24E).

Subtopics

1.7.1 Setting the Printer Function

1.7.1 Setting the Printer Function

1. Ensure that the printer has paper.
2. Switch the printer Off (O).
3. Press and hold the **Online** key, then switch the printer On (|). The printer prints the present setting. (For purposes of illustration, the following example is shown with all settings in the Off position.)

PICTURE 3

| **Note:** Refer to the memo that is printed out along with the present
| switch settings.

4. Press the **Propark** key to proceed through the function menu. You will hear a beep each time you make a selection.
5. Press the **NLQ** key to switch a selection On or Off.

Note: A short beep informs you that the selection has been turned On, and a long beep informs you that the selection has been turned Off.

6. Press the **Online** key to save all the settings. The printer will then print out the new settings. (For purposes of illustration, the following example is shown with settings 1 and 3 On, and all other settings Off.)

PICTURE 4

For further information on printer function settings, refer to your Proprinter *Guide to Operations*.

1.8 Serial-Interface Card Switches (Proprinter I, II, and X24)

The serial-interface card has two groups of switches: Group A and Group B.

The switch settings determine how the printer receives data from the computer/terminal. The tables in this section describe each of the switch functions.

PICTURE 5

Subtopics

1.8.1 Group A

1.8.2 Group B

1.8.1 Group A

A1	A2	A3	Speed bps
On	On	Off	150
On	Off	On	300
On	Off	Off	600
Off	On	On	1200
Off	On	Off	2400
Off	Off	On	4800
Off	Off	Off	9600
On	On	On	19,200

A4	A5	Parity
Off	Off	No
Off	On	Ignore
On	Off	Odd
On	On	Even

Note: If A4 is set to Off and A5 is set to On (ignore parity), the printer ignores the received parity and transmits even parity. For all other parity settings, the transmitted parity matches the received parity.

A6	Protocol
Off	XON/XOFF
On	DTR controlled

Note: Switch A7 is always Off.

1.8.2 Group B

B1	Data Bits
Off	8
On	7

B2	Stop Bits
Off	1
On	2

B3	Print Test
Off	Normal mode
On	Test mode

Note: Switch B4 is always Off.

1.9 Serial-Interface Card Switches (Proprinter 4201/4202 Model 003 and 4207/4208 Model 002)

The serial-interface card has 10 function switches and two mode selection switches.

The switch settings determine how the printer receives data from the computer/terminal. The tables in this section describe each of the switch functions.

PICTURE 6

Subtopics

1.9.1 Function Switches

1.9.1 Function Switches

A1	A2	A3	A4	Speed bps
On	On	Off	Off	150
On	Off	On	Off	300
On	Off	Off	Off	600
Off	On	On	Off	1200
Off	On	Off	Off	2400
Off	Off	On	Off	4800
Off	Off	Off	Off	9600
On	On	On	Off	19,200
Off	Off	Off	On	38,400

A5	Data Bits
Off	8
On	7

A6	A7	Parity
Off	Off	No
Off	On	Ignore
On	Off	Odd
On	On	Even

Note: If A6 is set to Off and A7 is set to On (ignore parity), the printer ignores the received parity and transmits even parity. For all other parity settings, the transmitted parity matches the received parity.

A8	Stop Bits
Off	1
On	2

A9	Protocol
Off	XON/XOFF
On	DTR controlled

A10	Print Test
Off	Normal mode
On	Test mode

| 1.10 Mode Selection Switches (Proprinter III, IIIXL, X24E, and XL24E)

There are two mode selection switches.

Subtopics

1.10.1 Switch 1

1.10.2 Switch 2

1.10.3 Serial Interface Self-Test

1.10.1 Switch 1

Switch 1 configures the serial interface in either RS-232 or RS-422 mode.

1.10.2 Switch 2

Switch 2 is used to reverse the polarity of the receive and transmit data line for the RS-422 serial interface.

PICTURE 7

1.10.3 Serial Interface Self-Test

1. Ensure that the printer is switched Off (O) and the jumper is installed on the parallel port.
2. Set switch B3 to On (Proprinters I, II, XL, IIXL, X24, XL24), or set switch A10 to On (Proprinters III, IIIXL, X24E, XL24E).
3. Switch the printer On (|).

3

PICTURE 8

Note: Depending on your switch settings, your printout may vary.

4. Verify that the switch settings on the serial card match the settings on your printout.
5. If the printout matches the example, the test ran correctly.
6. If the printer fails when attached to a serial terminal or computer, see the following table.

Symptom	Probable Cause	Fix
Data that is not usable, or upside-down question marks are printed	Card switches are not set to the same value that your computer or terminal uses.	See "Serial-Interface Card Switches (Proprinter I, II, and X24)" in topic 1.8 or "Serial-Interface Card Switches (Proprinter 4201/4202 Model 003 and 4207/4208 Model 002)" in topic 1.9.
Lost data using any protocol	Card switches are incorrectly set. Incorrect serial interface cable connections. Computer or terminal does not follow selected protocol.	See "Serial-Interface Card Switches (Proprinter I, II, and X24)" in topic 1.8 or "Serial-Interface Card Switches (Proprinter 4201/4202 Model 003 and 4207/4208 Model 002)" in topic 1.9. Correctly connect the serial interface cable. Ensure that you are using the correct protocol and baud rate.
No data printed	Poor serial interface cable connection. Card switches incorrectly set. Card failure, printer failure, terminal failure, or computer failure.	Check serial, interface cable connections before having the printer serviced. See "Serial-Interface Card Switches (Proprinter I, II, and X24)" in topic 1.8 or "Serial-Interface Card Switches (Proprinter 4201/4202 Model 003 and 4207/4208 Model 002)" in topic 1.9. If another terminal or computer is available, try the printer connected to it to see if the failure persists.

1.11 General Checkout

- Are the cables correctly attached?
- Are the internal DIP switches and/or the Operator panel function menu correctly set?
- Is the ribbon cartridge correctly installed in the printer?
- Is the ribbon correctly positioned? (Ribbon should be between the print head and ribbon shield and pushed down so that it is in front of the print head wires.)
- Is the forms-thickness lever in the correct position (position 2 or greater)?
- Is the paper loaded correctly?

PICTURE 9

- Is the paper aligned with the printer?
- Are there any obstructions in the external paper path, such as wires, cables, sharp edges, or corners?
- Is forms guide installed correctly?
- Is the printer switched On (|)?

1.12 *Clearing Paper Jams*

PICTURE 10

1.13 Common Printer Problems

Symptom	Repair Action
Locked in Propark mode	<ul style="list-style-type: none"> <input type="checkbox"/> If the printer is in Propark mode (Propark light on the Operator panel is On: <ol style="list-style-type: none"> 1. Remove all paper from the printer. 2. Press the Offline key. 3. Make the printer do a forms feed by pressing and holding the Feed key. 4. Press the Online key. 5. Press the Propark key. <p>The Propark light should go Off and the forms knob should rotate the pin-feed assembly.</p> <input type="checkbox"/> Perform printer initialization procedure (page 1.2.1).
Missing dots	<ul style="list-style-type: none"> <input type="checkbox"/> Ensure forms-thickness lever is in correct position (position 2 or greater). <input type="checkbox"/> Ensure that the print head cable is correctly connected. <input type="checkbox"/> Verify print head gap. <input type="checkbox"/> Replace print head/cable assembly. <input type="checkbox"/> Replace PC board.
Flashing lights on Operator panel	<ul style="list-style-type: none"> <input type="checkbox"/> Ensure that the print head carrier and ribbon drives are not binding. <input type="checkbox"/> Ensure that the home sensor is free of obstructions and that the tab on the print head carrier is not broken. <input type="checkbox"/> Ensure that all of the Operator panel pins are properly plugged into the connector sockets. <input type="checkbox"/> Replace PC board.
Operator panel does not function properly	<ul style="list-style-type: none"> <input type="checkbox"/> Reseat Operator panel. <input type="checkbox"/> Replace Operator panel. <input type="checkbox"/> Ensure that upper paper guide is fully snapped to base.
Printer does not power-up	<ul style="list-style-type: none"> <input type="checkbox"/> Replace transformer. <input type="checkbox"/> Replace PC board.
Ribbon does not advance	<ul style="list-style-type: none"> <input type="checkbox"/> Ensure that the ribbon is not jammed inside the cartridge. <input type="checkbox"/> Ensure that the ribbon is installed correctly. <input type="checkbox"/> Replace ribbon drive gears.
Locking lever is loose on tractor housing	Replace tractor housing.
End-of-forms sensor does not function properly	<ul style="list-style-type: none"> <input type="checkbox"/> Ensure that the printer is level (not tilted to the front or back). <input type="checkbox"/> Ensure that the printer is free of paper dust and debris.
Paper jams or does not feed	<ul style="list-style-type: none"> <input type="checkbox"/> Ensure that the adhesive labels are not stuck to the guide strip, and that the guide strip is not folded underneath platen. Replace guide strip if it is bent, creased, or torn. <input type="checkbox"/> Ensure that bottom paper guide is fully seated. <input type="checkbox"/> Ensure that paper is aligned properly. <input type="checkbox"/> Ensure that the paper path is free of all debris. <input type="checkbox"/> Remove housings and remove any debris.
Uneven vertical print	<ul style="list-style-type: none"> <input type="checkbox"/> Perform bidirectional print adjustment (All Propark models). <input type="checkbox"/> Perform print head-to-platen adjustment. <input type="checkbox"/> Replace print head motor, helix, and coupling. <input type="checkbox"/> Replace ribbon cartridge.
Prints slow or stops	Proprinters will automatically slow down or stop to prevent overheating. The length of time the printer will print before slowdown will vary.
White lines in	<input type="checkbox"/> Reference ECA 001, 002, 003.

graphic mode	
Drifting margin	<ul style="list-style-type: none"><input type="checkbox"/> Perform print head-to-platen adjustment procedure. Ensure that ribbon moves freely in cartridge, and that it is not binding.<input type="checkbox"/> Ensure the bottom paper guide is snapped into place correctly:<ul style="list-style-type: none">- Propark model Proprinters snap up.- All other Proprinters snap down.<input type="checkbox"/> Ensure left rear rubber foot is not pinched and that print unit is installed correctly.<input type="checkbox"/> Lubricate print head support shafts. <p>Note: Do not lubricate helix.</p>

1.14 Common Sheetfeeder Problems

Symptom	Repair Action
Frequent sheetfeeder misfeeds	Refer to ECA 001, 002, 003.
Paper does not advance all the way through the sheetfeeder	Ensure that the feed rolls are clean and that there are no obstructions in the paper path. Warning: Clean feed rolls with isopropyl alcohol only.
Printer runs, but sheetfeeder does not (sheet feed paper guide wheels do not turn when the paper-advance knob is turned)	<input type="checkbox"/> Ensure that the printer cover is properly seated on the base. <input type="checkbox"/> Ensure that the sheetfeeder is pushed all the way down, and gears are engaged. <input type="checkbox"/> Replace printer cover.
Printer consistently indicates Paper Out condition	Ensure that the DIP switch or Operator panel function menu has been correctly set.

PICTURE 11

1.15 Sheetfeeder Drive Gear Kit (P/N 51F3712)

This kit provides the parts needed to repair both a narrow- and wide-version sheetfeeder with a damaged or broken main drive gear mounting stud.

The kit includes one of each of the following:

- Installation instructions
- Main drive gear
- Bushing
- Self-tapping screw.

1.16 Adjustments

Subtopics

1.16.1 Print Head to Platen Adjustment (All Proprinters)

1.16.1 Print Head to Platen Adjustment (All Proprinters)

When any of the following conditions exist, the print head to platen gap adjustment is recommended:

- You are installing a new print unit mechanism. (New print units that come from the factory are not adjusted.)
- The left margin shifts to the right.
- The print head impact varies across the page.

To perform the adjustment:

1. Switch the printer Off (O) and unplug it.
2. Remove the ribbon and the cover.
3. Tear a small section of 20 lb standard multisystem paper to be used as a gauge to set the head gap. This should be approximately 1 inch square. The use of this gauge will allow the CE to adjust 9-wire and 24-wire printers in the same manner. This adjustment procedure allows the ribbon shield to remain in place for all Proprinters.

This operation is in two steps:

1. Adjusting the parallelism:
 - a. With the print head placed in the far left position, and the forms-thickness lever in position 1, place the paper gauge between the print head and the platen.
 - b. Sliding the gauge back and forth between the print head and the platen will provide you with an understanding of how the gap is set on the left side of the platen.
 - c. Move the print head to the far right side-frame, and repeat the gauging process.
 - d. The right side should produce the same amount of drag on the gauge as the left side. Loosen or tighten the gap on the right to match that of the left side by using a 5-mm (0.196-in.) allen wrench on the rear guide rod bushing in the right side-frame.

PICTURE 12

Now that the print head gap is parallel, set the gap to the proper distance.

2. Setting the print head gap:
 - a. With the forms-thickness lever in position 1, a slight drag should be felt when lightly pulling the paper gauge between the print head and the platen.

With the forms-thickness lever in position 2, there should be NO drag on the paper when sliding between the print head and the platen.

Note: Ensure that the paper does not extend below the print head since this will cause interference with the bottom of the print head and could be misinterpreted as drag.

- b. To adjust the left side print head gap, insert the tip of a narrow screwdriver or similar tool into the hole in the left end of the rear guide rod. Hold the forms-thickness lever in place and rotate the rear guide rod toward the back of the machine to decrease the gap. A very slight drag on the paper gauge should be felt when moving the gauge between the print head and the platen.

PICTURE 13

There should be NO drag when the forms-thickness lever is in position 2.

Ensure the print head gap is identical on the right side by using a 5-mm (0.196-in.) allen wrench to adjust the rear guide rod acentric bushing.

This adjustment should be made on both ends of the carriage and in the middle. This will ensure that the gap is equal across the length of the platen.

Warning: The forms-thickness lever should NEVER be set to position 1 when the printer is in use. This is for adjustment only and may cause paper jams or print head damage if operated in position 1.

1.17 Service Tips

□ Printing speed slows down and the Proprinter may stop. Incorporated on all Proprinter models are various features that protect against premature failure due to overusage or overheating conditions.

These features monitor the level of usage on the index forms motor, print head drive motor, and print head.

Note: Each model Proprinter will perform differently with respect to when the protect feature is activated. This is due to differences in relative speeds between models.

The printing speed slowdown is normal operation for the Proprinter, and parts replacement will not improve or change this condition.

□ Check printer usage specifications. Field data has shown that printer usage must not exceed twice the daily page usage to avoid reliability or service problems. Customers may be expecting their printer to perform above and beyond the design limits set during development and manufacture.

Consult the following table to determine proper printer usage:

Narrow Carriage:	Wide Carriage:
4201-001, 002, 003 4207-001, 002	4202-001, 002, 003 4208-001, 002
5.4 million characters/year	7.8 million characters/year
350 pages/month	500 pages/month
16 pages/day	23 pages/day

□ Re-seat the printhead motor to improve print quality. If after replacing the print head motor, helix, and coupling, the print quality is still bad, try re-seating the print head motor to loosen or tighten it. Doing this might improve the print quality of the printer.

□ EPROM change. ECAs 001, 002, 003. If the proprinter is experiencing any of the following symptoms:

- Frequent misfeeds of cut sheets with the sheetfeeder option installed.
- Vertical misregistration when using different print modes on the same print line (NLQ and Draft).
- Vertical misalignment of left margin only when printing in Condensed mode.
- Several white lines appear when printing high resolution graphics.
- Several of the first printed characters appear fuzzy when printing in Draft mode.

Refer to the following ECAs:

- ECA 001 for 4201-003 and 4202-003
- ECA 002 for 4207-002 and 4208-002
- ECA 003 for 4207-001 and 4208-001.

- When the Proprinter X24E forms-thickness lever is set for three- or four-part forms or for envelopes, the *print speed* is automatically reduced.
- Dot registration can vary when printing bidirectionally. If registration is critical to the customer, have the customer try unidirectional printing.
- The forms-thickness lever should be in position 2 or greater. Position 1 is used only for platen gap adjustment. When replacing the main access cover, always recheck the forms-thickness lever position before printing since reinstalling the access cover tends to knock the forms-thickness lever to position 1 without the operator knowing it.
- Ensure that the bottom paper guide is snapped into place correctly. All Proprinters that have the Propark function snap up, all other Proprinters snap down.
- If the printer is experiencing a *margin drift* or print registration problem and performing the bidirectional print adjustment doesn't help, the problem may be a worn coupler. The P/N for each coupler is listed in the paper feed assembly in this manual.
- If the pinfeed shaft assembly breaks the left side-frame retainer, there is a side-frame repair clip available. This clip can prevent the usage of a print unit. The part number for this repair clip is P/N 1047096 and it comes in a package of 10.
- If the print shaft is dirty, the carrier slows to the point that the logic thinks the carrier is at the left or right side-frame, or the carrier is jammed. This could result in print problems or cause the printer to stop. A small amount of silicone lubricant (P/N 23F5155)

will clean and lubricate the print shaft.

- If printer self-tests run correctly, but, after connecting to the host and running a job, you get erratic symptoms, check the interface cable for grounding and shielding. Symptoms could include:
 - Missing or erroneous characters
 - Incorrect indexing
 - Head crashing
 - Incorrect paper spacing
 - Motor failure
 - Other indications.

2.0 Chapter 2. 4212 Proprinter 24p

Subtopics

- 2.1 Related Publications
- 2.2 Checklist
- 2.3 Font or Pitch Lock
- 2.4 Thermal Protection Slowdown
- 2.5 Switch Settings
- 2.6 Performing the Printer Test
- 2.7 Interrupting or Stopping the Printer Test
- 2.8 Adjusting the Bidirectional Alignment

2.1 Related Publications

- User's Reference for the IBM Proprinter 24P, SA40-0534*
- Operator Reference for the IBM Proprinter 24P, SA40-0535*
- IBM Proprinter 24P Technical Reference, SA40-0537*
- IBM Proprinter 24P Hardware Maintenance and Service Manual, SA40-0536.*

2.2 Checklist

- ___ Are the cables correctly attached?
- ___ Are the internal DIP switches and software switches correctly set?
- ___ Is the ribbon cartridge correctly installed in the printer?
- ___ Is the ribbon correctly positioned? (Ribbon should be between the print head and ribbon shield and pushed down so that it is in front of the print head wires.)
- ___ Is the forms-thickness lever in the correct position? (Position 2 or greater.)
- ___ Is the paper loaded correctly?
- ___ Is the paper aligned with the printer?
- ___ Are there any obstructions in the external paper path, such as wires, cables, or sharp edges or corners?
- ___ Is the forms separator installed correctly?

2.3 Font or Pitch Lock

Font or pitch lock prevents the software from changing font and pitch settings selected at the operator panel.

When the application software overrides font or pitch settings selected from the printer's operator panel:

- The light beside the selected font or pitch on the operator panel moves to another setting.
- The document prints in a font or pitch not selected from the operator panel.

To set font or pitch lock, do one or both of the following procedures:

Font Lock Press and hold the **Alt** key, then press the **Font** key.

The Font Lock light comes on to indicate font lock is active.

Pitch Lock Press and hold the **Alt** key, then press the **Pitch** key.

The Pitch Lock light comes on to indicate pitch lock is active.

To exit font or pitch lock for either font or pitch settings, repeat the above procedure (or procedures).

2.4 Thermal Protection Slowdown

The IBM* Proprinter 24P* will automatically slow down to prevent overheating of the print head and forms feed motor. The length of time the printer will print before slowdown begins will vary depending on the font being used and the type of material being printed. During slowdown, the printer can pause in the middle of a job (time of pause will vary), it can shift from bidirectional to unidirectional printing, and it can move the print head across the page several times (without printing) after printing a line.

This operation is normal and the printer does not require servicing.

2.5 Switch Settings

For additional information, refer to the *User's Reference for the IBM Proprinter 24P* .

Block 1	
1	Sheet Feeder
2	Alternate Graphics mode
3	Character Set 1 or 2
4	Forms Length 11 or 12
5	Auto LF after CR
6	Auto CR after LF
7	Code Page Selection
8	Code Page Selection

Block 2	
1	Unidirectional print only
2	Bidirectional alignment
3	Bidirectional alignment
4	Bidirectional alignment

2.6 Performing the Printer Test

To perform a Printer Test, follow these steps:

1. Switch the printer Off (O).
2. Press the **Form Feed** key while you switch the printer On (|).
3. Release the **Form Feed** key when printing starts.

The printout will continue printing until you stop the printer.

If the printout does not print, your printer may have a problem.

2.7 Interrupting or Stopping the Printer Test

To interrupt the Printer Test:

1. Press **Start/Stop**. The test stops after a complete line of characters has printed.
2. Press **Start/Stop** to continue the test sample.

To stop the Printer Test, switch the printer Off (O).

2.8 *Adjusting the Bidirectional Alignment*

1. Make sure you install either continuous or cut form paper.
2. Switch the printer Off (O).
3. Press and hold the **Line Feed** and **Form Feed** keys while switching the printer On (|).
4. Release the keys after you switch the power on. The printer prints a series of bars that show vertical alignment. To the right of the bars is a rectangle showing the switch settings for each vertical alignment. The current switch setting is shown by four asterisks to the right of one the samples.

PICTURE 14

5. Switch the printer Off (O).
6. Unplug the printer power cord from the electrical outlet.
7. Lift the forms separator.
8. Remove the side cover on the left side of your printer.
9. Using a ballpoint pen or other small instrument (but not a pencil), set the DIP switches in Block 2 On or Off to match the setting of the line you selected from the diagram you just printed.
10. Replace the side cover.
11. Plug the printer power cord into the electrical outlet.

Note: For your safety, you *must* replace the side cover after adjusting the DIP switches.

3.0 Chapter 3. Parts Catalog

This chapter contains illustrations and exploded views of the Proprinters described in this book. Corresponding lists of part numbers and descriptions help you identify and order the part or assembly you need.

Subtopics

3.1 420X Proprinter (Common Parts)

3.2 ECA P/N Information

3.3 Assemblies

3.1 420X Proprinter (Common Parts)

Does not include Proprinter 24P.

Part No.	Description
42F1814	Interface connector clips
1047096	Left side-frame repair clips (10)
6185888	Linecord
23F5155	Lubricant (never lube helix shaft)
1047207	Paper advance knob w/sleeve
1047206	Paper advance knob sleeve
49F5261	Pull tractor asm (narrow)
49F5262	Pull tractor asm (wide)
51F3712	Sheet feed drive gear kit
1196994	Tractor housings with lock lever
1326832	Propark button cover
6934658	Silicon
6934659	Red grease

3.2 ECA P/N Information

Part No.	Description
1196948	EPROM, ECA 001 (4201, 4202 Models 3)
1196954	EPROM, ECA 003 (4207, 4208 Models 1)
1196953	EPROM, ECA 002 (4207, 4208 Models 2)

3.3 Assemblies

Subtopics

- 3.3.1 Assembly 1: Main Cover and Accessories (All Models)
- 3.3.2 Assembly 2: Base Logic (All Models)
- 3.3.3 Assembly 2: Base Logic (All Models)
- 3.3.4 Assembly 3: Paper Feed (4201-001, 4201-002, 4201-003 and 4202-001)
- 3.3.5 Assembly 4: Paper Feed (4201-003 and 4202-003)
- 3.3.6 Assembly 5: Paper Feed (4207-001 and 4208-001)
- 3.3.7 Assembly 6: Paper Feed (4207-002 and 4208-002)
- 3.3.8 Assembly 7: 4212 Proprinter 24P

3.3.1 Assembly 1: Main Cover and Accessories (All Models)

PICTURE 15

Asm- Index	Part Number	Description			
1-1	64X7711	Cover	4201-001		
	87X9642		4201-002		
	23F4459		4201-003		
	64X7773		4202-001		
	23F5151		4202-002		
	23F5029		4202-003		
	94X6302		4207-001		
	23F4725		4207-002		
	94X5956		4208-001		
	23F4756		4208-002		
	1-2		64X7712	Guide	4201-001
			87X9643		4201-002 4207-001
			23F4461		4201-003 4207-002
			64X7774		4202-001,002 4208-001
23F4757		4208-002			
1-3		6185888	Line Cord		All Models
	1047207	Knob and Sleeve			
1-4	1047207	Knob and Sleeve	All Models		
	64X7775		Shield		
1-5	64X7775	Shield	4202-003 4208-002		
	87X9696		Operator		
1-6		Set-Up Label	4201-001		
			4202-002		
	23F4449		4201-003		
			4202-003		
	70X0119		4202-001		
	23F5157		4201-002		
	87X9379		4207-001		
	23F4545		4207-002		
			4208-001, 002		
	1-7		87X9641	Main Cover	4201-001,002 4207-001
23F4460		4201-003 4207-002			
94X5958		4202-001,002 4208-001			
23F4755		4202-003 4208-002			
6328888		Operator Panel			
1-8	6328888	Operator Panel	4201-001		

Proprinters: Service Information and Parts Catalog
Assembly 1: Main Cover and Accessories (All Models)

	87X9625		4201-002 4202-001,002
	23F4457		4201-003 4202-003
	94X5950		4207-001 4208-001
	23F4709		4207-002 4208-002
1-9	42F1814	Interface Connector Clips	All Models
1-10	56X9794	Guide	All Wide Models

3.3.2 Assembly 2: Base Logic (All Models)

PICTURE 16

Asm- Index	Part Number	Description	
2-1	64X7716	Guide Strip	4201-001,002 4207-001
	94X5941		4202-001,002 4208-001
2-2	64X7717	Top Guide	4201-001
	94X6094		4201-002 4207-001
	23F4569		4201-003 4207-002
	94X5942		4202-001,002 4208-001
	23F4721		4202-003 4208-002
2-3	87X9632	Bottom Guide	4201-001,002 4207-001
	23F4443		4201-003 4207-002
	04F5064		4202-001,002 4208-001
	23F4743		4202-003 4208-001
2-4	6493168	Serial-Int Card	4201-001,002 4202-001,002 4207-001 4208-001
	23F4465		4201-003 4202-003 4207-002 4208-002
2-5	64X7657	Jumper	All Models
2-6	87X9620	Power Supply	4201-001,002 4202-001,002
	23F4730		4207-002 4208-002
	94X5977		4208-001 4208-002
	23F4440		4201-003 4202-003
2-7	0078951	Fuse	All 4201 All 4202
	6123874		4207-001 4208-001
	4885618		4207-002 4208-002
2-8	6185887	PC Board	4201-001
	87X9633		4201-002
	49F5237		4201-003 4202-003

Proprinters: Service Information and Parts Catalog
Assembly 2: Base Logic (All Models)

56X9787	4202-001
23F5160	4202-002
94X5962	4207-001 4208-001
49F5242	4207-002 4208-002

3.3.3 Assembly 2: Base Logic (All Models)

PICTURE 17

Asm- Index	Part Number	Description	
2-9	87X9629	Ground Shield	4201-001,002 4207-001
	23F4433		4201-003 4207-002
	04F5121		4202-001 4208-001
	23F4741		4202-002,003 4208-002
2-10	64X7722	Rubber Feet	4201-001 4201-002 4202-001 4202-002 4207-001 4208-001
	23F4429		4201-003 4202-003 4207-002 4208-002
2-11	87X9636	Base Assembly	4201-001,002 4207-001
	23F4430		4201-003 4207-002
	94X5964		4202-001 4208-001
	23F5152		4202-002
	23F4740		4202-003 4208-002
2-12	6493206	Print Buffer Mod	4201-001,002 4202-001,002
	23F4462		4201-003 4202-003
2-13	64X7723	Form Sense Lever	All Models

PICTURE 18

Asm- Index	Part Number	Description	
3-1	64X7724	Pinfeed Assembly	4201-001,002
	64X7785		4202-001,002
3-2	1196994	Tractor Housings	All Models
3-3	87X9638	Forms Release Lever	4201-001,002
	94X5966		4202-001,002
3-4	87X9647	Feed Roll Assembly	4201-001,002
	56X9789		4202-001
	94X5967		4202-002
3-5	64X7727	Platen	4201-001
	87X9639		4201-002
	64X7787		4202-001
	23F5073		4202-002
3-6	6493207	Rear Guide Rod with Lever	4201-001
	87X9649		4201-002
	56X9790		4202-001,002
3-7	87X9646	Print Head Assembly	4201-001,002
	56X9791		4202-001,002
3-8	64X7728	Ribbon Shield	4201-001,002 4202-001,002
3-9	64X7729	Right Side-Frame	4201-001,002 4202-001,002
3-10	6185882	Ribbon Drive Gears with Spring	4201-001,002 4202-001,002
3-11	64X7730	Coupling	4201-001
	94X5971		4201-002 4202-001,002
3-12	64X7731	Front Guide Rod	4201-001,002
	64X7788		4202-001,002
3-13	87X9648	Print Head Motor	4201-001,002
	23F5159	with Left Side Frame	4201-001,002
3-14	94X6176	Left Side-Frame	4201-001,002 4202-001,002
3-15	94X6177	Form Drive Gears with Frame	4201-001,002 4202-001,002
3-16	6185889	Form Motor, Gears and Frame Side-Frame	4201-001,002
	23F5074		4202-001,002

3.3.5 Assembly 4: Paper Feed (4201-003 and 4202-003)

PICTURE 19

Asm- Index	Part Number	Description	
4-1	23F4452	Pinfeed Assembly	4201-003
	23F5023		4202-003
4-2	1196994	Tractor Housings	All Models
4-3	87X9638	Forms Release Lever	4201-003
	94X5966		4202-003
4-4	23F4453	Feed Roll Assembly	4201-003
	23F4751		4202-003
4-5	23F4468	Pressure Roll Assembly	4201-003
	23F4752		4202-003
4-6	23F4454	Platen	4201-003
	23F5027		4202-003
4-7	23F4455	Rear Guide Rod with Thick Lever	4201-003
	56X9790		4202-003
4-8	23F4450	Print Head Assembly	4201-003
	23F5025		4202-003
4-9	23F5024	Ribbon Shield	4201-003 4202-003
4-10	23F4451	Right Side-Frame with Ribbon Drive Gears	4201-003 4202-003
4-11	94X5971	Coupling	4201-003 4202-003
4-12	94X6084	Front Guide Rod	4201-003
	64X7788		4202-003
4-13	23F4446	Print Head Motor with Left Side-Frame	4201-003
	23F5019		4202-003
4-14	23F4445	Left Side-Frame	4201-003 4202-003
4-15	23F4447	Form Motor with Drive Gears and Side-Frame	4201-003 4202-003
4-16	04F5179	Damper Clip	4202-003
4-17	23F4469	Ribbon Drive Gear	4201-003 4202-003

3.3.6 Assembly 5: Paper Feed (4207-001 and 4208-001)

PICTURE 20

Asm- Index	Part Number	Description	
5-1	64X7724	Pinfeed Assembly	4207-001
	64X7785		4208-001
5-2	64X7725	Pinfeed Wheel Lock Lever	All Models
5-3	87X9638	Forms Release Lever	4207-001
	94X5966		4208-001
5-4	87X9647	Feed Roll Assembly	4207-001
	94X5967		4208-001
5-5	94X6323	Platen	4207-001
	94X5943		4208-001
5-6	94X6083	Print Head Assembly	4207-001
	94X5969		4208-001
5-7	94X5944	Front Carrier Bearing	4207-001 4208-001
5-8	6185882	Ribbon Drive Gears	4207-001 4208-001
5-9	94X5971	Coupling	4207-001 4208-001
5-10	94X6084	Front Guide Rod	4207-001
	64X7788		4208-001
5-11	94X5905	Card Cable Clip	4207-001 4208-001
5-12	1326885	Form Motor	4207-001 4208-001
5-13	1326881	Paper Feed Gears	4207-001 4208-001
5-14	04F5130	Frame Assembly (Includes Feed Rolls and Release Lever Assembly, Platen, 4207-001 4207-002	
	04F5133	Forms-Thickness Lever Assembly, Left and Right Side-Frames, and Front 4208-001 4208-002	
		Guide Rod)	
5-15	1326880	Motor/Helix and	4207-001
	1326882	Coupling Assembly	4208-001

3.3.7 Assembly 6: Paper Feed (4207-002 and 4208-002)

PICTURE 21

Asm- Index	Part Number	Description	
6-1	23F4452	Pinfeed Assembly	4207-002
	23F5023		4208-002
6-2	1196994	Tractor Housings	All Models
6-3	87X9638	Form Release Lever	4207-002
	94X5966		4208-002
6-4	23F4453	Feed Roll Assembly	4207-002
	23F4751		4208-002
6-5	23F4468	Pressure Roll Assembly	4207-002
	23F4752		4208-002
6-6	23F4454	Platen	4207-002
	23F5027		4208-002
6-7	23F4717	Motor, Helix, Coupling, and Ribbon Drive Gear	4207-002
	23F4747		4208-002
6-8	23F4469	Ribbon Drive Gear	4207-002
			4208-002
6-9	23F4722	Coupling	4207-002
			4208-002
6-10	23F4750	Print Head Assembly	4207-002
			4208-002
6-11	94X6084	Front Guide Rod	4207-002
	64X7788		4208-002
6-12	23F4698	Print Head Cables (Front and Rear)	4207-002
	23F4758		4208-002
6-13	23F4759	Switch Assembly	4207-002
			4208-002
6-14	1326884	Form Motor	4207-002
			4208-002
6-15	1326881	Paper Feed Gears	4207-002
			4208-002
6-16	23F4716	Frame Assembly (Includes Feed Rolls and Release Lever Assembly, Platen, Forms-Thickness Lever Assembly, Left and Right Side-Frames, and Front Guide Rod)	4207-001
			4207-002
	23F4746		4208-001
			4208-002

3.3.8 Assembly 7: 4212 Proprinter 24P

PICTURE 22

Asm- Index	Part Number	Description
7-1	1196747	Tractor Assembly/Tractor
7-2	1196746	Tractor Group
7-3	1196748	Printhead Motor Assembly
7-4	23F4469	Ribbon Drive Gear
7-5	1047475	Printhead Cable Assembly
7-6	1196757	Printhead Cable Retainer
7-7	1196750	Printhead
7-8	1196751	Ribbon Shield
7-9	1047466	Printed Circuit Card
7-10	1196754	Idler Gear
7-11	1196755	Gear Knob Mounting
7-12	1196761	Carrier Helix Nut
7-13	1196758	Forms Motor
7-14	1196779	Forms Motor Cable
7-15	1196579	Tractor Park Lever
7-16	1126833	Retaining Clip
7-17	1622683	Screw
7-18	1196756	Park Spring and Washer
7-19	1196759	Printhead Screw
7-20	23F4440	Power Supply 120 V (60Hz-U.S. and Canada)
7-21	0615683	Fuse
7-22	1196744	Ground Shield
NS	1047465	Operator Panel (Includes Overlays)
NS	1047476	Operator Panel Cable
NS	1047489	Frame Asm. (Does not include Motors or Printhead)

4.0 Chapter 4. Part Number Index

Part Number	Asm-Index	Page
0078951	2-7	33
04F5064	2-3	33
04F5121	2-9	35
04F5130	5-14	41
04F5133	5-14	41
04F5179	4-17	39
0615683	7-21	45
1047207	1-4	31
1047465	NS	45
1047466	7-9	45
1047475	7-5	45
1047476	NS	45
1047489	NS	45
1126833	7-16	45
1196579	7-15	45
1196744	7-22	45
1196746	7-2	45
1196747	7-1	45
1196748	7-3	45
1196750	7-7	45
1196751	7-8	45
1196754	7-10	45
1196755	7-11	45
1196756	7-18	45
1196757	7-6	45
1196758	7-13	45
1196759	7-19	45
1196761	7-12	45
1196779	7-14	45
1196994	3-2	37
1196994	4-2	39
1196994	6-2	43
1326880	5-15	41
1326881	5-13	41
1326881	6-15	43
1326882	5-15	41
1326884	6-14	43
1326885	5-12	41
1622683	7-17	45

Proprinters: Service Information and Parts Catalog
Chapter 4. Part Number Index

23F4429	2-10	35
23F4430	2-11	35
23F4433	2-9	35
23F4440	2-6	33
23F4440	7-20	45
23F4443	2-3	33
23F4445	4-14	39
23F4446	4-13	39
23F4447	4-16	39
23F4448	4-15	39
23F4449	1-6	31
23F4450	4-8	39
23F4451	4-10	39
23F4452	4-1	39
23F4452	6-1	43
23F4453	4-4	39
23F4453	6-4	43
23F4454	4-6	39
23F4454	6-6	43
23F4455	4-7	39
23F4457	1-8	31
23F4459	1-1	31
23F4460	1-7	31
23F4461	1-2	31
23F4462	2-12	35
23F4465	2-4	33
23F4468	4-5	39
23F4468	6-5	43
23F4469	4-18	39
23F4469	6-8	43
23F4469	7-4	45
23F4545	1-6	31
23F4569	2-2	33
23F4698	6-12	43
23F4709	1-8	31
23F4716	6-16	43
23F4717	6-7	43
23F4721	2-2	33
23F4722	6-9	43
23F4725	1-1	31
23F4730	2-6	33
23F4740	2-11	35

Proprinters: Service Information and Parts Catalog
Chapter 4. Part Number Index

23F4741 2-9	35
23F4743 2-3	33
23F4746 6-16	43
23F4747 6-7	43
23F4750 6-10	43
23F4751 4-4	39
23F4751 6-4	43
23F4752 4-5	39
23F4752 6-5	43
23F4755 1-7	31
23F4756 1-1	31
23F4757 1-2	31
23F4758 6-12	43
23F4759 6-13	43
23F5019 4-13	39
23F5023 4-1	39
23F5023 6-1	43
23F5024 4-9	39
23F5025 4-8	39
23F5027 4-6	39
23F5027 6-6	43
23F5029 1-1	31
23F5073 3-5	37
23F5074 3-16	37
23F5151 1-1	31
23F5152 2-11	35
23F5157 1-6	31
23F5159 3-13	37
23F5160 2-8	33
42F1814 1-9	31
4885618 2-7	33
49F5237 2-8	33
49F5242 2-8	33
56X9787 2-8	33
56X9789 3-4	37
56X9790 3-6	37
56X9760 4-7	39
56X9791 3-7	37
56X9794 1-10	31
6123874 2-7	33
6185882 3-10	37
6185882 5-8	41

Proprinters: Service Information and Parts Catalog
Chapter 4. Part Number Index

6185887	2-8	33
6185888	1-3	31
6185889	3-16	37
6328888	1-8	31
64X7657	2-5	33
64X7711	1-1	31
64X7712	1-2	31
64X7716	2-1	33
64X7717	2-2	33
64X7722	2-10	35
64X7723	2-13	35
64X7724	3-1	37
64X7724	5-1	41
64X7725	5-2	41
64X7727	3-5	37
64X7728	3-8	37
64X7729	3-9	37
64X7730	3-11	37
64X7731	3-12	37
64X7731	4-12	39
64X7773	1-1	31
64X7774	1-2	31
64X7775	1-5	31
64X7785	3-1	37
64X7785	5-1	41
64X7787	3-5	37
64X7788	3-12	37
64X7788	4-12	39
64X7788	5-10	41
64X7788	6-11	43
6493168	2-4	33
6493206	2-12	35
6493207	3-6	37
70X0119	1-6	31
87X9379	1-6	31
87X9620	2-6	33
87X9625	1-8	31
87X9629	2-9	35
87X9632	2-3	33
87X9633	2-8	33
87X9636	2-11	35
87X9638	3-3	37

87X9638 4-3	39
87X9638 5-3	41
87X9638 6-3	43
87X9639 3-5	37
87X9641 1-7	31
87X9642 1-1	31
87X9643 1-2	31
87X9646 3-7	37
87X9647 3-4	37
87X9647 5-4	41
87X9648 3-13	37
87X9649 3-6	37
87X9696 1-6	31
94X5905 5-11	41
94X5941 2-1	33
94X5942 2-2	33
94X5943 5-5	41
94X5944 5-7	41
94X5950 1-8	31
94X5956 1-1	31
94X5958 1-7	31
94X5962 2-8	33
94X5964 2-11	35
94X5966 3-3	37
94X5966 4-3	39
94X5966 5-3	41
94X5966 6-3	43
94X5967 3-4	37
94X5967 5-4	41
94X5969 5-6	41
94X5971 3-11	37
94X5971 4-11	39
94X5971 5-9	41
94X5977 2-6	33
94X6083 5-6	41
94X6084 4-12	39
94X6084 5-10	41
94X6084 6-11	43
94X6094 2-2	33
94X6176 3-14	37
94X6177 3-15	37
94X6302 1-1	31

4 4 4 4 4 4 4 4 4 4 4 4											
2 2 2 2 2 2 2 2 2 2 2 2											
0 0 0 0 0 0 0 0 0 0 0 0											
1 1 1 1 2 2 2 2 7 7 8 8											
+-----+-----+-----+-----+											
1 2 3 1 2 3 1 2 1 2											
Model											
. Y . . Y	49F5242	Board, Logic									
. Y . . Y	94X5962	Board, Logic									
. Y	23F5160	Board, Logic									
. Y	56X9787	Board, Logic									
. . . Y . . Y	49F5237	Board, Logic									
. . Y	87X9633	Board, Logic									
Y	6185887	Board, Logic									
. . . Y . . . Y . . Y . . Y	23F4465	Card, Serial Interface									
Y Y . . Y Y . . Y . . Y . . Y	6493168	Card, Serial Interface									
. Y . . Y	23F4722	Coupling									
. . Y Y Y Y Y Y Y . . Y . .	94X5971	Coupling									
Y	64X7730	Coupling									
. Y Y	23F4755	Cover, Top									
. Y Y Y . . .	94X5958	Cover, Top									
. . . Y Y	23F4460	Cover, Top									
Y Y Y	87X9641	Cover, Top									
. Y Y	23F4757	Cover, Cont Formguide									
. Y Y Y . . .	64X7774	Cover, Cont Formguide									
. . . Y Y	23F4461	Cover, Cont Formguide									
. . Y Y	87X9643	Cover, Cont Formguide									
Y	64X7712	Cover, Cont Formguide									
. Y	23F4756	Cover, Main Access									
. Y	94X5956	Cover, Main Access									
. Y	23F4725	Cover, Main Access									
. Y	94X6302	Cover, Main Access									
. Y	23F5029	Cover, Main Access									
. Y	23F5151	Cover, Main Access									
. Y	64X7773	Cover, Main Access									
. . . Y	23F4459	Cover, Main Access									
. . Y	87X9642	Cover, Main Access									
Y	64X7711	Cover, Main Access									
. . . Y . . . Y . . Y . . Y . . Y	23F4429	Cover, Rubber Foot									
. . Y . . . Y . . Y . . Y . . Y . . Y	64X7722	Cover, Rubber Foot									
Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y	64X7723	EOF Lever									
Y Y Y	87X9647	Feed Roll Asm									
. Y	56X9789	Feed Roll Asm									
. Y Y	94X5967	Feed Roll Asm									
. . . Y Y	23F4453	Feed Roll Asm									
. Y Y	23F4751	Feed Roll Asm									
. Y Y Y	94X5941	Guide Strip									
Y Y Y	64X7716	Guide Strip									
. Y Y	23F5023	Pinfeed Assy									
. Y Y Y	64X7785	Pinfeed Assy									
. . . Y Y	23F4452	Pinfeed Assy									
Y Y Y	64X7724	Pinfeed Assy									
. Y Y Y Y Y Y	94X5966	Forms Release Lever									
Y Y Y Y	87X9638	Forms Release Lever									
. Y . . Y	6123874	Fuse, 2.5A									

4 4 4 4 4 4 4 4 4 4 4 4											
2 2 2 2 2 2 2 2 2 2 2 2											
0 0 0 0 0 0 0 0 0 0 0 0											
1 1 1 1 2 2 2 2 7 7 8 8											
+-----+-----+-----+-----+											
1 2 3 1 2 3 1 2 1 2											
Model											
. Y . . Y	4885618	Fuse, 4.0A									
Y Y Y Y Y Y Y	0078951	Fuse, 1.6A									
Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y	1047207	Knob & Sleeve Assy									
. Y	23F4462	Module, Print Buffer									
Y Y . . . Y Y	6493206	Module, Print Buffer									
. Y . . Y	94X5950	Operator Panel									
. . . Y . . . Y	23F4457	Operator Panel									
. Y . . Y	23F4709	Operator Panel									
. . Y . . . Y Y	87X9625	Operator Panel									
Y .	6328888	Operator Panel									
. Y	94X5943	Platen									
. Y	94X6323	Platen									
. Y Y	23F5027	Platen									
. Y	23F5073	Platen									

. . . . Y	64X7787 Platen
. . Y Y . .	23F4454 Platen
. Y Y . .	87X9639 Platen
Y	64X7727 Platen
Y Y Y Y Y Y Y Y Y Y Y Y	6185888 Power Cord
. Y . Y .	94X5977 Power Supply
. . Y . . Y . . .	23F4440 Power Supply
. Y . Y	23F4730 Power Supply
Y Y . Y Y . . .	87X9620 Power Supply
. Y .	94X5969 Printhead, 24 pin
. Y . Y	23F4750 Printhead, 24 pin
. . . . Y . .	94X6083 Printhead, 24 pin
. . . Y . .	23F5025 Printhead, 9 pin
. . Y Y . .	56X9791 Printhead, 9 pin
. Y . . .	23F4450 Printhead, 9 pin
Y Y . . .	87X9646 Printhead, 9 pin
. . . . Y	23F4758 Printhead Cables
. . . Y .	23F4698 Printhead Cables
. Y . Y Y Y	23F4469 Ribbon Drive Gear
Y Y Y Y Y Y Y Y	6185882 Ribbon Drv Gear W/Spring
. Y . Y .	23F5024 Ribbon Shield
Y Y Y Y Y	64X7728 Ribbon Shield
Y Y Y Y Y Y Y Y Y Y Y Y	1196994 Tractor Hsgs with Lock LVR
Y Y Y Y Y Y Y Y Y Y Y Y	64X7657 Tool, Wrap Plug
Y Y Y Y Y Y Y Y Y Y Y Y	42F1814 Interface Connector Clips
. Y . . Y Y	87X9565 Sheet Feed Assy
. . . Y . Y Y	87X9587 Sheet Feed Assy